UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,321	12/26/2001	Joseph J. Stevens	006120 CPI/ECP	3220

32588 7590 03/01/2004

APPLIED MATERIALS, INC.
2881 SCOTT BLVD. M/S 2061
SANTA CLARA, CA 95050

EXAMINER	
EDWARDS, LAURA ESTELLE	
ART UNIT	**PAPER NUMBER**
1734	

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/036,321	STEVENS ET AL.	
	Examiner	Art Unit	
	Laura E. Edwards	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) *25-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 7-15* is/are rejected.

7)☒ Claim(s) *2-6 and 16-24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *42602*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Election/Restrictions

Applicant's election with traverse of Group I, claims 1-24 in the response dated 12/3/03 is acknowledged. The traversal is on the ground(s) that the apparatus as claimed can't be used to process wood or glass. This is not found persuasive because the restriction requirement is deemed reasonable and proper. While the method as recited can be used to plate metal on a substrate, the apparatus can be used in another materially different process such as cleaning and/or coating glass for LCD manufacture.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aegerter et al (US 6,632,292).

Aegerter et al teach a plating system comprising a central substrate transfer station having at least one substrate transfer robot (610 or 625) positioned therein; a substrate activation or prewetting station in communication with the central substrate transfer station and accessible to the at least one substrate transfer robot, a substrate plating station in communication with the central substrate transfer station and accessible to the at least one substrate transfer robot; a substrate spin rinse dry or clean/dry station in communication with the central substrate transfer enclosure and accessible to the at least one substrate transfer robot; and at least one substrate pod or input/output station in communication with the substrate transfer station and accessible to the at least one substrate transfer robot (see col. 16, lines 30-65; see Figs. 14 and 15). Aegerter et al recognizes in col. 16, lines 35-44, various complementary processing stations may be provided for execution of electrodeposition of metal such as copper on the wafer. In the list of options for complementary stations, Aegerter et al is silent concerning the inclusion of an annealing station, however, it was known in the art, at the time the invention was made, to provide for annealing or CMP of a metal plated wafer in order to facilitate adherence or bonding of the metal to the wafer as evidenced by Aegerter et al (see col. 1, lines 63+ to col. 2, lines 1-18). It would have been obvious to one of ordinary skill in the art to provide an annealing or CMP station in the Aegerter et al plating system as an additional complementary station to facilitate adherence or bonding of the metal to the substrate. It is within the purview of one skilled in the art to add an annealing or CMP station to a wafer plating system as a complementary processing station for its known benefit of enhancement of bonding of metal to the wafer.

With respect to the general design of the processing stations and how fluid is applied to the wafer, see col. 8, lines 64+ to col. 9, lines 1-52.

Allowable Subject Matter

Claims 2-6 and 16-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2-6 would be allowable because there is no teaching or suggestion in the prior art of a semiconductor processing apparatus comprising the combination of a central substrate transfer enclosure having at least one substrate transfer robot positioned therein; a substrate activation chamber in transfer enclosure and accessible to the at least one substrate transfer robot; a substrate plating chamber in communication with the central substrate transfer enclosure and accessible to the at least one substrate transfer robot; a substrate spin rinse dry chamber in communication with the central substrate communication with the central substrate transfer enclosure and accessible to the at least one substrate transfer robot; a substrate annealing chamber in communication with the central substrate transfer enclosure and accessible to the at least one substrate transfer robot; and at least one substrate pod loader in communication with the substrate transfer chamber and accessible to the at least one substrate transfer robot wherein the at least one substrate transfer robot comprises a first substrate transfer robot and a second substrate transfer robot, wherein the first and second substrate transfer robots have a handoff positioned therebetween.

Claims 16-24 would be allowable because there is no teaching or suggestion in the prior art of a semiconductor plating apparatus comprising the combination of a semiconductor plating system, comprising: a central transfer enclosure; a first substrate transfer robot positioned in a first region of the substrate transfer enclosure; a second substrate transfer robot positioned in a second region of the substrate transfer enclosure; at first substrate pod loader in communication with the first region of the substrate transfer enclosure; a second substrate pod loader in communication with the second region of the substrate transfer enclosure, an activation enclosure in communication with the first region of the substrate transfer enclosure, a substrate plating enclosure in communication with the first region of the substrate transfer enclosure; a substrate spin rinse dry enclosure in communication with the second region of the substrate transfer enclosure; a substrate annealing enclosure in communication with the second region of the substrate transfer enclosure; and a substrate handoff positioned in the substrate transfer enclosure and in communication with the first region and the second region.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent discloses the use of semiconductor equipment for plating glass for making LCDs: Nakashima et al (US 6,634,370; see col. 15, lines 57-60). The following patents disclose the state of the art with respect to plating systems: Chen et al (US 6,565,729) and Curtis et al (US 6,558,470).

Note: The present application has been examined electronically, however, no copies of the NPL (non-patent literature) references could be found. Therefore, the NPL references were not considered. Due to time constraints, the Examiner was unable retrieve such documents via attorney correspondence. Please resubmit copies of the NPL references as they will be considered in the next office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura E. Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Laura E. Edwards
Primary Examiner
Art Unit 1734

Le
February 20, 2004